



*Seattle Department of Transportation*

## Memorandum

Date: 2010 March 11

To: Users of SDOT Pavement Opening and Restoration Rule 5-2009

From: SDOT Pavement Engineering and Management

Subject: **PORR Revision**  
**Full Lane Asphalt Restoration Waiver on Chip Seal Streets**

## BACKGROUND

The current version of the SDOT Street and Sidewalk Pavement Opening and Restoration Director's Rule (PORR) requires full lane width asphalt pavement restoration on openings one hundred (100) linear feet or more in length. Consistent with the City's Standard Specifications, the PORR also sets minimum patch dimensions and requires paving be expanded so that joints are not located in vehicle wheel paths, a critical loading area. The relevant PORR sections are:

**7.3.1 Minimum size of restoration:** On flexible base pavements, the required minimum size of an asphalt patch shall be three (3) feet in both the longitudinal and transverse directions. If the patch is at the edge of the pavement, the patch shall be expanded to a minimum of three (3) feet in width. On rigid base pavements, the requirements of Section 6.0 RESTORING PORTLAND CEMENT CONCRETE (PCC) STREET SURFACES shall determine patch size.

**7.3.3 Cut Expansion:** Cuts shall be expanded to curbs, pavement edges, cracks and include existing patches within two (2) feet of the opening. Cuts shall be expanded to ensure new longitudinal joints are not located in wheel path.

**7.3.4 Openings one hundred (100) linear feet or longer:** The minimum restoration requirement for openings one hundred linear feet or greater is full-lane width restoration for all lanes affected. Segregation, poor compaction and other defects are commonly observed on narrow, hand placed asphalt patches. Two examples are shown below.

Segregation, poor compaction, poor ride and other defects are commonly observed on narrow, hand placed asphalt patches. The patch also creates additional joints which crack and allow water to penetrate and weaken the pavement. Two examples are shown below.



Such defects leave a restoration that often deteriorates faster than the pavement surrounding it. The current PORR requirements aim to improve the quality of asphalt patches by specifying dimensions that allow equipment to more uniformly place and compact asphalt.

## **RECOMMENDATIONS**

About 25 percent (560 lane-miles) of Seattle's non-arterial streets, were converted in the 1960's and 1970's from gravel roads to a low-cost pavement commonly referred to as chip seal. The roadways were graded as necessary with aggregate, a cold mix asphalt material placed, and then the new surface was finished with a chip seal treatment. Chip seal streets are resealed on a regular basis, to address environmental distress such as cracking and raveling. This protects the pavement from weathering and water penetration (which weakens the pavement structure).

While it is still critical to maintain quality in construction, the regular resealing process mitigates some of the concerns about asphalt patch performance. SDOT Pavement Engineering and Management believes it is acceptable to waive the asphalt full lane width restoration requirement on chip seal roadways that do not see regular uses by heavy vehicles.

## **REVISION TO PORR**

Based on the factors described above, SDOT Pavement Engineering and Management will permit the full lane width requirements of PORR Section 7.3.4 to be waived on chip seal streets provided the following conditions are met:

1. The patch is made on a chip seal street classified as non-arterial, without bus or industrial truck traffic.
2. The pavement is restored full depth across the zone of influence (PORR Section 3.8) with the minimum section of 3" HMA CL ½" (match existing if greater) and 6" Type 2 Mineral Aggregate Base called for in PORR Sections 7.5.1 and 7.5.2.5.

Asphalt patches should be substantially free of segregation and remain fully subject to standards outlined in City of Seattle's Standard Specifications Section 5-04. Meet lines should be sealed as outlined in the Specifications.

The changes above will be incorporated into the next full revision of the PORR.